known ocean. And this estimate of human powers, I thought, should be a bar against the indulgence of all those envyings and heart-burnings that too often embitter the professional career. And then, if I followed them into the recesses of their study, I learnt that knowledge not only fills but purifies the understanding; that, in their communing with Nature, their minds had insensibly imbibed her influences; that their industry, like hers, was calm, unobtrusive, and incessant—an instinct rather than an effort, and its reward the gratitude of mankind. If their lives were chequered with the good and evil of our lot, I saw that they sustained the trials of prosperity with honour, and the sharp strokes of adversity with dignity. The consciousness of duties discharged, and the occupations of their career, alleviated private griefs; while the contemplation of the serenity and steadfastness of Nature prepared the heart for those higher and nobler thoughts without which there is indeed no repose."

Let me add, we have reason to know that such thoughts were entertained by both, and consequently that it may be said of both—

"They rest from their labours, and their works do follow them."

IODOFORM AS A LOCAL APPLICATION.

By WYNDHAM COTTLE, M.A., M.B.Oxon., F.R.C.S., M.R.C.P.,
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AT a time when many new remedies are constantly being brought to the notice of the profession, and often lauded as of extraordinary virtue, but, after a longer and more extended trial, disappear from practice and are heard of no more, I should feel some disinclination to call attention to a not widely known drug, had not so high an authority as Mr. Berkeley Hill already done so. But, indeed, iodoform scarcely comes within this category. It has been in extensive use for some time by many surgeons, and, during the last two or three years, I have experimented with and prescribed it largely and with the most encouraging results. First discovered about the year 1824 by Serullas, its properties have long been known to chemists. It is readily obtained by adding an alcoholic solution of potash to tincture of iodine, and crystallises as a yellow lustrous coarse-grained powder of a peculiar pungent penetrating odour. It stands in the same relation to its analogues chloroform and bromoform as hydriodic acid does to hydrochloric and hydrobromic. It may be regarded as chloroform ($C H Cl_3$), in which the three atoms of chlorine are replaced by three of iodine ($C H I_3$). It also forms substitution compounds with chlorine and bromine. It is sparingly soluble in water and glycerine, less sparingly so in alcohol and warm oil, but readily soluble in ether, and to a still greater degree in chloroform.

Two years ago, I made solutions of iodoform in alcohol and ether; but, as the liquid rapidly became of a dark iodine tint, I feared that some substitution-product or decomposition might take place in the liquid, and generally employed the solution in warm oil. Chloroform is, I believe, its most effective solvent. Iodoform can readily, by trituration, be made into an ointment with either lard or vaseline, and its odour, in some measure, disguised by the addition of essential oils, as the essential oil of almonds. As a powder, it can be employed alone or diluted with fullers' earth, magnesia, or tannin; the last mentioned body having the peculiar property of, in some measure, removing its powerful and disagreeable odour.

In the form of suppositories, iodoform has been employed as a local anodyne, but with no marked benefit, as I understand, though I have no experience of it in this respect. As a powder, it has been extensively applied to cancers and venereal sores; and I have to thank my friend Mr. George Perry for calling my attention to its use in these cases, when I was at once struck by the very remarkable results produced. Its action can, perhaps, be best shown by stating its effect in the several affections in which I have applied it.

Venereal Sores.—Iodoform seems to act equally well in these cases whether they are ordinary venereal sores or genuine hard or soft chancres, and whether situated beneath the prepuce or on other parts. Its action seems to be that of a topical irritant in some measure, and it may set up too much local action, if applied to an inflamed sore or wound, as Mr. Berkeley Hill points out in his paper on the subject in the BRITISH MEDICAL JOURNAL of January 26th, 1878. It should not, therefore, be applied to a sore when acutely inflamed.

From records of cases, I find that twenty cases of venereal sores classed "primary syphilis", which occurred in practice in their chance sequence and without any effort at selection, were treated by me by the ordinary local methods, with or without internal remedies. These were, on an average, rather more than twice as long under treatment, before the sores were completely healed, as the same number of other cases, taken in a similar way and under precisely similar conditions, in which the only remedial measure was the topical application of iodoform. These results are the more encouraging when I add that, in patients so treated, there is diminished risk of buboes and lessened constitutional depression from the more rapid progress of the cases. It seemed to me also that the sequence of secondary syphilis was less frequent. Iodoform acts particularly well in cases where there is a disposition to slough.

Buboes, Syphilitic Ulceration, etc.—In practice, buboes that are most tedious and indolent are of frequent occurrence. They often have deep and extensive sinuses and fissures that show little or no inclination to heal, and sorely tax the patience both of the surgeon and of the patient. I have found that these cases almost invariably rapidly granulate, contract, and cicatrise by the application of iodoform; and the same obtains in the late forms of syphilitic ulceration. A man, about twenty-eight years of age, with serpiginous ulceration of syphilitic origin, which, first breaking out in the groin, had extended over the lower part of the abdomen and upper part of the thigh, and was for over a year under treatment, with every likely remedy, including change to the seaside. In this case, nothing seemed to check the morbid process, or to set up healthy action, till iodoform was called into requisition. Under its use, the ulceration had almost healed, when the patient was lost sight of. I have often injected the deep sinuses that may result from buboes, etc., with a solution of iodoform, and have frequently found them mend under this treatment when other means have failed. As an injection in gonorrhœa, in the few cases in which it was tried, it seemed to set up so much inflammation, that I abandoned its use.

Chronic Ulcers.—In ulcers about the lower extremities, and indeed elsewhere, I have formed a very high opinion of iodoform as a therapeutic agent. I have used it largely both at the hospital and in private. Ulcers that have remained open for years, and on the treatment of which much care and skill have been expended, often close in a few weeks under its influence; but the same caution must be repeated as in the case of venereal sores. It will only irritate the actively inflamed wound. It is the indolent ulcer, from whatever cause it may arise, whether from varicose veins, malnutrition, syphilis, or injury, that is especially benefited by iodoform. Repeatedly, under its use, I have seen a surface, glazed or œdematous, rapidly take on healthy action, granulate, and heal, and this where other measures have been tried for months, or even longer, without effect. Often, too, the pain that so frequently accompanies these ulcerative processes ceases after iodoform has been applied for a few hours.

As a Parasiticide.—In many cases of ringworm of the scalp of long duration, and which had been before the subjects of much and careful treatment, I have prescribed iodoform in the form of an ointment. In several of these, speedy improvement ensued, spores being no longer to be found and the parts returning to a state of health; but I met, in some instances, with considerable difficulty in inducing the parents to apply the remedy, on account of its powerful odour. It set up no violent inflammation, and I hope it may prove an useful adjunct to the means at our disposal for combating that disease.

Chloasma quickly yields to this agent; but, again, its odour is an insuperable objection to its employment in the treatment of this disease. The results that I obtained from its application in several cases of sycosis were not encouraging, as it seemed to give rise to undue irritation. In the form of powder, I have used iodoform in several cases of lupus with ulceration and rodent ulcer; but my observations on its conduct in these cases have not been at present sufficiently complete to warrant a definite opinion.

A word, in conclusion, as to its mode of application. If used as a powder, iodoform should be dusted on the ulcerated surface, and a piece of dry lint, or lint soaked in a weak solution of carbolic acid, may be laid over it, and this process repeated night and morning. Undiluted, I have often found it apt to produce irritation and pain, and, therefore, generally prescribe it mixed with equal parts of either fullers' earth or tannin. As a parasiticide, I have used it as an ointment with about twenty grains to an ounce of lard, and have directed it to be applied twice daily. Such an ointment spread on lint is a convenient mode of application to a wound or ulcer, and its employment in this form prevents the risk of dropping this disagreeably smelling drug on the patient's clothes, etc. If an ointment of the strength named cause inflammation or pain, it may be diluted. I am also in the habit of ordering iodoform in combination with a salt of mercury, etc., with satisfactory results. So also it may most conveniently and easily be applied by painting the part with its solution in alcohol, chloroform, or ether, as Mr. Hill describes.

There are two drawbacks to the use of iodoform. The first is its extremely disagreeable odour, which, unless it is carefully covered over,

scents the room in which the patient is; the second is its high price. The latter, however, would soon be reduced, if any considerable demand arose for it.

A SUCCESSFUL CASE OF SPLENOTOMY.*

By Dr. A. MARTIN, Berlin.

The great progress of modern laparotomy, which we all agree we owe principally to the energetic initiative of our English brethren, is sufficiently proved to encourage us to-day to proceed to the removal of growths and degenerate abdominal organs which but a short time ago seemed to be a *noli me tangere*. The benefit of this we gynæcologists particularly enjoy, as only thereby the removal of those genital organs which seem to be singularly exposed to degeneration has become common property amongst us. Looking at the results of ovariotomy, we can boldly proceed to the removal, if it become necessary, of any other abdominal organ, provided only that this step do not injure irreparably the bodily system. And here only begins the great difficulty, namely, to know what organs the body can lose without fatal result. Experiments on animals cannot be accepted as the best evidence in the settlement of this question; much more do we owe to those accidents which destroy or wholly arrest the function of the organs of the abdominal cavity. If this can be proved in a convincing manner, the removal of degenerate organs or parts of them can be a question only of improved surgical manipulation.

An organ, the function of which has remained a problem to physiologists, the *spleen*, seems to have been always protected against surgical interference because of its unknown value in the corporeal system. But there are partial and even entire interruptions of the function of this organ, chiefly from traumatic causes, which show that we can easily spare it from the body; and, as far as I have examined the literature of the subject, these accidental cases encourage us to make a favourable prognosis when surgical interference becomes necessary. And bold surgeons have taught us already that this extirpation can be done. The results of these cases have not, indeed, until now been very favourable to this extirpation, as out of nine patients only three recovered from the operation. But if we examine the causes of the six failures, we find that one died of pyæmia; two sank under the influence of shock; while the remaining three died of bleeding, one upon the operation-table, and the two others a few hours after the operation. The three survivors recovered rapidly, and, as far as it is stated, enjoyed good health, suffering from no disturbance of digestion or other sources. It is much to be regretted that observations were not made on them as to changes in the blood. At all events, it seems to be ascertained that we can live without the function of the spleen.

Concerning the operation itself, in all these cases the organ has been considerably enlarged; by such enlargement, the spleen always grows towards the median abdominal line, and in no instance was there any difficulty noted in finding the diseased organ or in removing it through the abdominal incision. Surely, the difficulties of the operation are all accumulated in the ligation of the splenic vessels, which must be cut in the most dangerous neighbourhood of the stomach or of the pancreatic glands. In both cases, it is evident that the ligatures are likely to slip, or to injure to a fatal degree the functions of these organs. If, then, besides these dangers, the vessels are enormously distended with blood during the operation, we need not suppose that these splenic arteries and veins are particularly fragile if the ligatures cut through when tightened and come away. Nor should we be much surprised if the ligatures should slip, as we cannot put them far enough from the ends of the divided vessels; and just in these parts that would seem very necessary, as the blood from the great aorta runs directly into them with enormous force. Billroth is particularly afraid, it seems, of injuring the pancreatic gland, and concludes from his case, in which the ligature slipped off the artery two hours after the operation, that, in spite of the dangers resulting therefrom, we ought to tie the ligature even around a part of the pancreas, in order to secure the arteries and veins. Péan has fixed the ligature like a pedicle in the wound; others have taken the whole of the vessels in one; while others have secured the vessels singly. I think we should act every one according to his own experience, and that the method of treatment in every instance has to accommodate itself to particular circumstances. As far as these differ, the probability of the result differs. This evidently is proved by my own case, in which splenotomy was greatly facilitated by the single circumstance that the organ had left its usual place and was wandering about in the whole abdominal cavity, being suspended only by a pedicle which contained the elongated splenic vessels.

The patient, a poor hunchback woman, thirty-one years of age, menstruated abundantly at eleven. At the age of twenty-one, she suffered for a short time with rheumatism, and since then with palpitation of the heart. She has been twice confined: first in 1871, when forceps were used; secondly in 1875, spontaneously, though her pelvis was narrowed in consequence of early rickets. In her last childbed, which I had to witness in the Royal Maternity of Berlin, she suffered from lochiometra, in consequence of anteflexion of the puerperal uterus, which began the ninth day after confinement. Soon after her dismissal, she returned to the hospital to obtain relief from intense pain in the groin, which began as soon as she undertook the duties of her previous occupation, that of a laundress. By-and-by, the symptoms of endocarditis became intensely marked, and at the same time a wandering spleen was diagnosed. This wandering spleen at that time did not inconvenience the patient at all, as there was no soreness or tenderness, and she willingly appeared at the clinics of the different schools of Berlin. Notwithstanding the great attention paid to her in these clinics, her general health did not improve; especially, since her last confinement, chronic metritis and prolapsus of the anterior vaginal wall had developed to a high degree. Although she was treated in nearly all the clinical offices in the city, she became worse, and in time was hardly able to walk about. From the beginning of the year 1876, she felt other pains than those of the prolapsus and of the metritis, and attributnd them to the wandering spleen. At last, she resorted also to galvanism, which for some time diminished the pains; but, during last winter, she obtained but little relief from it, and could obtain no rest from her pains until she had taken enormous doses of morphia. She also came to my ambulance, complaining less of her menorrhagia and the prolapsus than of the severe pains in the spleen, which she diagnosed perfectly well herself. Repeated microscopical investigations proved the constitution of the blood and the number of the red corpuscles and their relation to the white ones to be quite normal, at least as far as could be ascertained by comparing the specimens with the blood of healthy persons. The corpuscles themselves were absolutely healthy. There could be no doubt as to the nature of the wandering tumour in the abdominal cavity. It was strikingly evident, as well from the volume as from the form, that the tumour felt immediately behind the very thin abdominal walls was the spleen. The hilus could be easily recognised, so also the borders of the tumour, which could not be mistaken; while the whole organ seemed not to be enlarged. Under percussion, the normal place of the spleen was empty immediately after the patient had been walking; but, after some hours' rest in bed, the dulness in this region returned. After she had walked to and fro for some time, and after pressing over the abdominal wall, the top of the spleen came down to the pelvic brim, so that it could be touched *per vaginam*. Without difficulty, it could be pressed down in the pelvis alongside of the uterus.

As the pain, which was constant and intense, and which continued even when the patient herself seemed unconscious from chloroform, could not be diminished by drugs or any other means, I thought I was justified in delivering the poor woman of the organ, especially since it was probably in a state of degeneration, though I was not, through the changes, able to satisfy myself as to this question. The operation of extirpation seemed the more justifiable, since I knew, through the successful cases of the other authors, that the removal would not necessarily endanger the system. I therefore proposed the operation of splenotomy to a council of medical friends, and, as they endorsed the step, I proposed it to the patient herself, adding at once a statement of the dangers of the operation. In despair, she agreed at once to undergo it, and I had some difficulty to convince her that we must wait until after the next menstrual period.

On May 13th, 1877, I performed the operation of splenotomy, observing most accurately the antiseptic method of operating. Before the patient was placed on the table, the spleen was pressed into the median line. This being done, chloroform was given. The incision, which was in the median line, was about four inches in length, extending from the umbilicus downwards. The walls of the abdomen were extremely thin. Under the peritoneal opening, the omentum presented, but the spleen had disappeared; after some difficulty, it was found in its normal place. I was astonished to find how difficult it was to bring the organ out of this position and through the incision. The hilus was occupied by a group of vessels, which seemed to be quite separated from each other and to run free of all connections with neighbouring organs a distance of about four inches. The group next the lower surface of the organ contained one large artery. This I tied as firmly as possible with a silk ligature. Then I took the middle group, containing some arteries and the splenic vein,

* Read in the Section of Surgery at the Annual Meeting of the British Medical Association in Manchester, August 1877.